Claims

[c1]   1. A method for filtering input data that is irrelevant for supply chain network planning purposes, said method comprising:

> determining stocking points comprising a part number and a location by exploding through a supply chain network to identify stocking points that have associated demand; and
> filtering input files to include only live stocking points.

[c2]   2. The method of claim 1, wherein said filtering process comprises imploding said supply chain network to identify said live stocking points that have associated supply that may be used to satisfy said demand.

[c3]   3. The method of claim 2, wherein said exploding and imploding are carried out recursively.

[c4]   4. The method of claim 1, wherein said exploding process evaluates at least one shipping routes in the supply chain network.

[c5]   5. The method of claim 2, wherein said imploding considers a stocking point to be live based on criteria com-

prising: available supply inventory, future availability of supply inventory, capability to manufacture said supply, and scheduled future delivery of said supply.

[c6] 6. The method of claim 1, wherein said supply chain network comprises at least one bill of material, wherein said supply chain network comprises specified binning relationships, and wherein said supply chain network comprises multiple stocking locations and defined shipping routes.

[c7] 7. The method of claim 1, wherein substitute stocking points are considered to be live if a corresponding stocking point is live, and co-product stocking points are considered to be live if an associated co-product stocking point live.

[c8] 8. A method of allocating supply items from a supply chain network using a production planning system, said method comprising:

inputting a customer order comprising part numbers and a customer location;

deriving a demand item from said customer order, said demand item comprising a part number of said part numbers and said customer location;

exploding said demand item through said supply chain network to identify a set of stocking points for

said part number that have shipping routes connected to said customer location;

imploding said demand item through said set of stocking points to:

identify ones of said stocking points that have the current ability to supply said part number as active stocking points; and

identify ones of said stocking points that do not have the current ability to supply said part number as inactive stocking points;

removing said inactive supply stocking points from said set of stocking points to allow only active stocking points to remain; and

allocating said active stocking points to said customer order using said production planning system to produce a material allocation plan.

[c9]   9. The method in claim 8, further comprising repeating said method for different customer orders.

[c10]   10. The method in claim 8, wherein said exploding process considers substitutes for said part number.

[c11]   11. The method in claim 8, wherein said imploding considers available inventory of said part number, capability to manufacture said part number, and scheduled future delivery of said part number.

[c12] 12. The method in claim 8, wherein said exploding and imploding processes are carried out recursively.

[c13] 13. The method in claim 8, wherein said exploding and imploding processes reduce the amount of data that is processed by said production planning system in said allocating process.

[c14] 14. The method in claim 8, further comprising:
deriving additional demand items from said customer order, each of said additional demand items comprising a different part number of said part numbers and said customer location; and
repeating said exploding and said imploding for said additional demand items derived from said customer order to produce a set of active stocking points.

[c15] 15. A method of allocating supply items from a supply chain network using a production planning system, said method comprising:
inputting a customer order comprising part numbers and a customer location;
deriving a demand item from said customer order, said demand item comprising a part number of said part numbers and said customer location;
exploding said demand item through said supply

chain network to identify a set of stocking points for said part number that have shipping routes connected to said customer location;

imploding said demand item through said set of stocking points to:

identify ones of said stocking points that have the current ability to supply said part number as active stocking points; and

identify ones of said stocking points that do not have the current ability to supply said part number as inactive stocking points;

removing said inactive supply stocking points from said set of stocking points to allow only active stocking points to remain;

deriving additional demand items from said customer order, each of said additional demand items comprising a different part number of said part numbers and said customer location;

repeating said exploding and said imploding for said additional demand items derived from said customer order to produce a set of active stocking points; and

allocating said active stocking points to said customer order using said production planning system to produce a material allocation plan.

[c16]   16. The method in claim 15, further comprising repeat-

ing said method for different customer orders.

[c17] 17. The method in claim 15, wherein said exploding process considers substitutes for said part number.

[c18] 18. The method in claim 15, wherein said imploding considers available inventory of said part number, capability to manufacture said part number, and scheduled future delivery of said part number.

[c19] 19. The method in claim 15, wherein said exploding and imploding processes are carried out recursively.

[c20] 20. The method in claim 15, wherein said exploding and imploding processes reduce the amount of data that is processed by said production planning system in said allocating process.

[c21] 21. A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform a method of allocating supply items from a supply chain network using a production planning system, said method comprising:

inputting a customer order comprising part numbers and a customer location;

deriving a demand item from said customer order, said demand item comprising a part number of said part numbers and said customer location;

exploding said demand item through said supply chain network to identify a set of stocking points for said part number that have shipping routes connected to said customer location;

imploding said demand item through said set of stocking points to:

identify ones of said stocking points that have the current ability to supply said part number as active stocking points; and

identify ones of said stocking points that do not have the current ability to supply said part number as inactive stocking points;

removing said inactive supply stocking points from said set of stocking points to allow only active stocking points to remain; and

allocating said active stocking points to said customer order using said production planning system to produce a material allocation plan.